CLAIMS

1. Braking force amplifier with dual amplification ratios including:

- a piston (70, 102) operated by a pressure differential between two chambers (6, 10);
- a plunger (22), mounted to be axially displaceable in this piston between positions controlling the evolution of this pressure differential by means of switching means (24), under the control of a brake pedal;
- a thrust assembly (71) comprising a reaction rod (82; 110) connected to the master-cylinder of the corresponding brakes and mounted to be axially displaceable under the control of the plunger between a first braking state corresponding to a first ratio of amplification of the braking force, and a second braking state corresponding to a second ratio of amplification of the braking force, and a deformable reaction disc (96) interposed between the piston and the plunger on the one hand and the reaction rod on the other,

characterised by the fact that the thrust assembly includes means (98, 104; 114) for absorbing the deformations of the reaction disc, the said deformations contributing to determining the braking force for which the passage between the first and the second braking states takes place.

2. Amplifier as described in claim 1, characterised by the fact that the said deformations are a function of the stiffness of the reaction disc (96).

3. Amplifier as described in claim 1 or 2, characterised by the fact that the piston (70) includes a bearing surface (74) intended to come into contact with a corresponding bearing surface (78) of the thrust assembly, the area of contact between these two surfaces substantially determining the second amplification ratio, and the distance (X) between these two surfaces, at rest,

contributing to determining the braking force for which the passage between the first and the second braking states takes place.

4. Amplifier as described in claim 4, characterised by the fact that the said bearing surfaces (74, 78) of the piston and of the thrust assembly (71) are annular and co-axial with each other.

5. Amplifier as described in any one of the preceding claims, characterised by the fact that the reaction disc (96) is arranged in a housing (112) formed in a head (84) at the end of the reaction rod (110), the said housing providing a cavity (114) forming the said means for absorption of the deformations.

6. Amplifier as described in claim 5, characterised by the fact that the housing (112) is suitable to receive an end of the piston (102) and has a dimension greater than that of the said end of the piston (102) so as to provide the cavity (114) for absorption of the deformations of the reaction disc (96).

7. Amplifier as described in any one of claims 1 to 4, characterised by the fact that the reaction rod (82) includes at its end a head (84) mounted to be axially displaceable within a sleeve (86) provided with a flange (94) forming on the one hand an orifice (73) in which an end of the piston (70, 102) slides, and on the other a bearing surface (98), the reaction disc (96) being housed within the sleeve bearing on one side on the said head (84) and on another side on the said bearing surface (98) of the flange, the said bearing surface (98) of the flange co-operating with the said end of the piston on displacement of the latter to form the said means for absorption of the deformations of the reaction disc.

8. Amplifier as described in claim 7, characterised by the fact that the orifice (73) formed by the flange (94) of the sleeve (86) is circular and by the fact that the end of the piston (70, 102) able to slide in this is cylindrical.

9. Amplifier as described in claim 7 or 8, characterised by the fact that elastic means (90) are mounted within the sleeve (86) bearing on the one hand on a face of the head (84) of the reaction rod (82) opposite to the reaction disc (96) and on the other on a stop (88) firmly attached to the sleeve to apply a return force to the latter.

10. Amplifier as described in claim 9, characterised by the fact that the elastic means (90) are formed of a conical washer.

11. Amplifier as described in one of claims 7 to 10, characterised by the fact that the sleeve (86) includes a shoulder (92) suitable to act as a travel limit stop to the head (84) of the reaction rod (82) in the absence of braking.

12. Amplifier as described in any one of the preceding claims, characterised by the fact that the reaction disc (96) is practically incompressible.

13. Amplifier as described in any one of the preceding claims, characterised by the fact that the first amplification ratio is practically constant.

14. Amplifier as described in any one of the preceding claims, characterised by the fact that the second amplification ratio is practically constant.